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Toward the Proper Application of Air Power
in Low-Intensity Conflict

by

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This study argues that the U.S. Air Force's current framework for applying air power, termed the strategic bombing model, is inappropriate for low-intensity conflict (LIC). It outlines this model and traces the application of strategic bombing principles, by American air campaign planners, in every major conflict involving air power since World War II. This study then describes how two characteristics of the LIC environment undermine the strategic bombing model: (1) the vital "center of gravity" in LIC is socio-political in nature, it is not embodied in the enemy's leadership element; and (2) the traditional targets for a strategic bombing campaign are too diffuse and abstract within a LIC scenario to be attacked effectively by air power. This study then proposes a framework, for the application of military force in LIC operations, that addresses these aspects of the LIC environment. It outlines the proper role for air power within this framework. This study notes that the effective employment of air power in LIC relies more on the airplane's ability to support ground operations than its capability to carry and drop ordnance.

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This study argues that the U.S. Air Force's current framework for applying air power, termed the strategic bombing model, is inappropriate for low-intensity conflict (LIC). It outlines this model and traces the application of strategic bombing principles, by American air campaign planners, in every major conflict involving air power since World War II. This study then describes how two characteristics of the LIC environment undermine the strategic bombing model: (1) the vital "center of gravity" in LIC is socio-political in nature, it is not embodied in the enemy's leadership element; and (2) the traditional targets for a strategic bombing campaign are too diffuse and abstract within a LIC scenario to be attacked effectively by air power. This study proposes an alternative framework for the application of military force in LIC operations that addresses these aspects of the LIC environment. It outlines the proper role for air power within this "new" framework. This study notes that the effective employment of air power in LIC relies more on the airplane's ability to support ground operations than its capability to carry and drop ordnance.

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EXECUTIVE SUMMARY

As a result of changing international and domestic environments, the American military establishment is undergoing an important reevaluation of its force structure and doctrine. These decisions are of unparalleled importance because of the nature of the military drawdown. Decisions made in the near future about how the armed forces operate are going to have a lasting impact. Mistakes are going to be extremely costly and are not going to be easily corrected. The Air Force has undergone a structural reorganization in an attempt to "streamline" its operations, but has given little attention to the need for doctrinal change and a force structure tailored to the future security environment.

The primary tenet of the current framework for employing air power, termed strategic bombing is: an enemy has certain "centers of gravity" which, when destroyed, degrade his ability to wage war. Strategic bombing advocates envision a series of concentric rings representing an enemy's centers of gravity. Air power provides a tool that allows the commander to attack whatever ring he deems appropriate for the situation.

The genesis for the concept of strategic bombing is the inter-war writing of Italian air strategist Giulio Douhet. American air campaign planners have employed Douhet's

principles in every major conflict involving air power since World War II. Air power advocates have adamantly maintained the efficacy of strategic bombing even when faced with its limitations. The Desert Storm air campaign served as an ultimate validation of the concept of strategic bombing.

Low-intensity conflict will play an increasingly larger part in the security picture emerging in the wake of the Cold War. Strategic bombing is an inappropriate framework for employing air assets in low-intensity operations. Two characteristics of low-intensity environment undermine the strategic bombing model: (1) the vital center of gravity in low-intensity conflict is social-political in nature, it is not embodied in the enemy's leadership element; and (2) the traditional targets for a strategic air campaign are too diffuse and abstract within a low-intensity scenario to be attacked effectively by air power.

While the proper employment of air assets in a low-intensity conflict will look quite different than their use in a conventional environment, air power *can* make a vital contribution to low-intensity operations. To do so, air power's application must focus more on the airplane's ability to support ground operations and less on its capability to carry and drop ordnance. As discussed in the body of this study, air power has five primary missions in low-intensity

operations: reconnaissance and surveillance; psychological operations; maintenance of air lines of communication; close air support; and support of civil action programs.

I. INTRODUCTION

In November 1992, Americans elected a new president, Bill Clinton, as a signal of their concern for the state of the U.S. economy. Increasing foreign trade imbalances and a towering domestic budget deficit are now seen as the primary threat to U.S. national interests. For some policymakers, cutting the overall defense budget to produce a "peace dividend" is President Clinton's primary tool to deal with American economic woes.[1]

As a result of the changing domestic environment, the American military establishment is undergoing a painful and important reevaluation of its force structure and doctrine. In particular, the U.S. Air Force has announced a massive, structural reorganization which seeks to "streamline" its operations.[2] The services are also locked in battle to protect their respective roles in various Department of Defense (DOD) missions. Air Force leadership believes that many of the proposals contained in the *Chairman of the Joint*

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1. Rick Maze, "Even More Defense Cuts Urged," *Air Force Times*, 1 March 1993, p. 3.

2. For a discussion of the reorganization "philosophy" see James W. Canaan, "One Base, One Wing, One Boss," *Air Force Magazine*, August 1991, pp. 17-19.

Chiefs of Staff Report on the Roles, Missions, and Functions of the Armed Forces of the United States (February 1993) impinge on the domain of Air Force assets.[3] While the Air Force is going through the motions of restructuring in reaction to the edicts of the President and Congress, it is also fighting to capture as much of a shrinking defense budget as it can for itself. However, the Air Force has given little attention to the need for creative doctrinal change to meet the new international security environment.

Containment of communism and deterrence of Soviet aggression are no longer seen as the primary tenets of our national security strategy. Proliferation of nuclear, biological and chemical weapons, drug trafficking, democratization, and international political, military and economic interdependence are the primary forces shaping U.S. security strategy.[4] The new international community, with its emphasis on open borders and free markets, provides an environment in which the insurgent, the terrorist, and the drug trafficker can operate with more freedom than ever before. As international interdependence grows, a given source of instability will produce

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3. See Neff Hudson, "Air Force Would Lose 'Copters Under Plan," *Air Force Times*, 1 February 1993, p. 10. and Julie Bird, "Air Force Would Share Air Defense Mission," *Air Force Times*, 1 March 1993, p. 6.

4. *National Military Strategy of the United States* (Washington, DC: The Pentagon, January 1992), p. 1.

effects within a wider and wider circle of influence. Given the stated U.S. commitment to a more open international system[5] and rising American dependence on other countries for products ranging from raw material to finished goods, the low-intensity threat presents itself as an increasingly important factor in the U.S. security picture.

In response to the changing domestic and international environments of the late 1980s, the Air Force issued a "new" philosophy of operations termed *Global Reach--Global Power.*[6] This new posture entails CONUS-based aircraft reacting to flashpoints as they occur throughout the world (global reach) with concentrated firepower (global power). This concept combines traditional views about the employment of air power with the political and economic realities of operating with less forward presence. It is an attempt to apply Cold War weapon systems and tactics to a new security environment where threats are more diffuse, less tangible, and must be managed with a shrinking support base.

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5. *National Security Strategy of the United States* (Washington, DC: The White House, August 1991), pp. 2-4.

6. Office of the Secretary of the Air Force, *The Air Force and U.S. National Security: Global Reach--Global Power* (Washington, DC: Department of the Air Force, June 1990).

Such a reliance on conventional doctrine in a world where unconventional conflict will play a greater role in determining the U.S. security posture is a mistake. The nature of conflict is changing and our doctrine needs to reflect this change. This study takes a critical look at the current framework for employing air power. It argues that this framework, although quite effective in conventional warfare, is inappropriate for one particular aspect of the emerging security picture--low-intensity conflict (LIC). It outlines the underlying assumptions of this framework and explains why they do not apply to the LIC environment. It presents an alternative framework, better suited to the unique characteristics of LIC operations and discusses the proper role for air power in this environment.

Chapter one examines the Air Force's current framework for the application of air power. This framework is termed the *strategic bombing model*. The model presented in this study exists in a myriad of Air Force professional military education (PME) publications.[7] According to the model, air power's proper application is to attack strategic targets by dropping bombs on them--hence the label strategic bombing.

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7. For example see Col John A. Warden III, "The Key to Success in War," in *Force Employment*, ed. by Capt Stephen L. Huffman (Maxwell AFB, AL: Squadron Officer School, Air University, 1992), pp. 2110-R-1 - 2110-R-5.

The second chapter opens with an examination of the genesis of strategic bombing--Giulio Douhet's treatise *The Command of the Air*. It then traces the application of strategic bombing principles by American air campaign planners in every major conflict involving air power since World War II. The chapter points out that air power advocates have maintained the efficacy of strategic bombing even when faced with its limitations.

Chapter three begins with a description of the changing international security environment. It stresses that low-intensity conflict is becoming increasingly relevant to the American security milieu. The chapter then points out why the strategic bombing model is inappropriate for operations in the low-intensity environment.

Chapter four presents a more appropriate framework for employing military force in LIC. It then outlines the proper role for air power within this framework. This discussion points out that the effective employment of air power in LIC relies more on the airplane's ability to support ground operations than its capability to carry and drop ordnance.

II. STRATEGIC BOMBING

This chapter examines the framework, or paradigm, for the application of air power that American air strategists employ in all conflict--*strategic bombing*. The primary tenet of strategic bombing--that an enemy has certain "centers of gravity" which, when destroyed, degrade his ability to wage war--originates in the writings of Carl von Clausewitz.[8] Strategic bombing advocates argue that every adversary can be characterized by a series of concentric rings which represent his centers of gravity. Air power provides a tool that allows the commander to attack whatever ring he deems appropriate for the situation.

A. CENTERS OF GRAVITY

Strategic bombing is based on a definition of centers of gravity that is the extrapolation of an idea expressed by Clausewitz in Book Eight of *On War*:

> Success is not due simply to general causes. Particular factors can often be decisive--details only known to those who were on the spot. There can also be moral factors which never come to light; while issues can be decided by

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8. Carl von Clausewitz, *On War*, trans. and ed. by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976).

> chances and incidents so minute as to figure in histories simply as anecdotes.
>
> What the theorist has to say here is this: one must keep the dominant characteristics of both belligerents in mind. *Out of these characteristics a certain center of gravity develops, the hub of all power and movement, on which everything depends. That is the point against which all our energies should be directed* [emphasis added].
>
> Small things always depend on great ones, unimportant on important, accidentals on essentials. This must guide our approach.[9]

An enemy's center of gravity, then, is the point (or points) where he is most vulnerable to attack.[10] Thus, any application of military force has the greatest chance of being decisive when it is directed against an enemy's center(s) of gravity.

This definition of center of gravity combines two principles of war: *mass* and *economy of force*. Mass is defined as the concentration of combat power at the decisive time and place.[11] Economy of force is the creation of usable mass by using minimum combat power on secondary objectives and, by the

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9. Ibid., pp. 595-596.

10. This interpretation of Clausewitz's use of the term is not entirely correct. However, this is how Air Force and Army doctrinaires define and use the term. See James J. Schneider and Lt Col Lawrence L. Izzo, "Clausewitz's Elusive Center of Gravity," *Parameters*, September 1987, pp. 46-57.

11. Air Force Manual (AFM) 1-1, *Basic Aerospace Doctrine of the United States Air Force* (Washington, DC: Department of the Air Force, March 1992), II, 11.

fullest use of all forces available.[12] Thus, for the commander to take full advantage of an enemy's centers of gravity, he must first identify them correctly. Then he must commit his forces to the destruction of the enemy's centers of gravity without sacrificing part of his forces to secondary objectives. In this manner, commanders employing the strategic bombing model expect to "bring any war to a quick and decisive conclusion by striking an enemy's vital centers."[13]

B. THE STRATEGIC BOMBING MODEL

Air campaign planners categorize potential targets according to a hierarchy of five concentric, strategic rings.[14] Each ring represents a center of gravity. The model ranks these centers of gravity according to their levels of decisiveness. The most vital center--leadership--lies at the heart of the model. Surrounding this core is a second ring depicting essential production facilities. The third ring represents key infrastructure. The civilian populace makes up the fourth ring. Surrounding the band of population

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12. Ibid.

13. Col Dennis M. Drew, "Shooting Missions No Longer an Either/Or Choice," *Air Force Times*, 21 June 1993, p. 31.

14. See Figure 1.

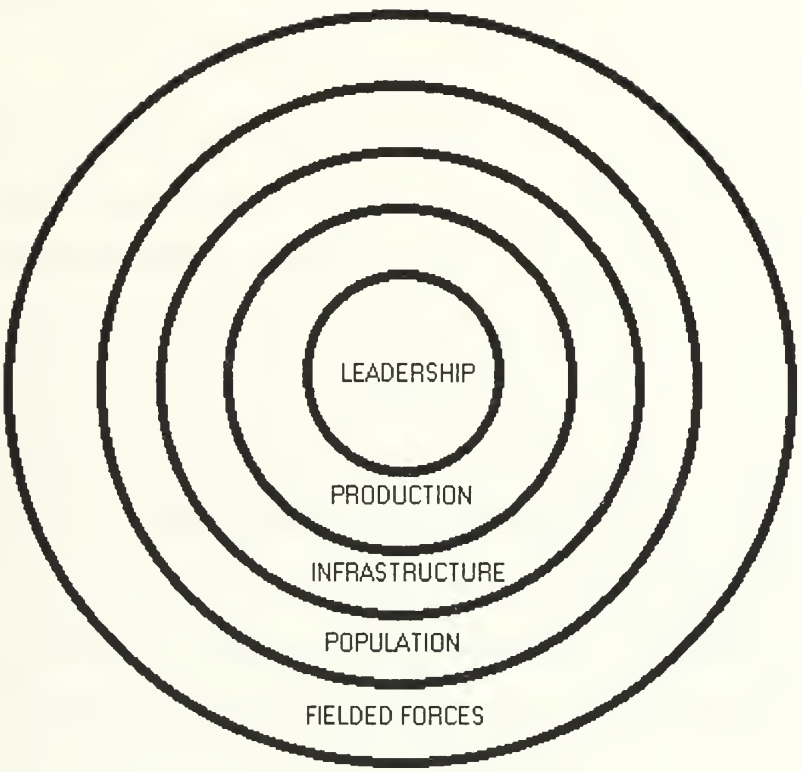

Figure 1. The Strategic Bombing Model

are fielded military forces. Commanders select the appropriate ring (or rings) to be targeted based on consideration of specific political-military objectives, disposition of enemy and friendly forces, and accessibility of targets.

1. Leadership

According to the strategic bombing model, leadership is the most vital center of gravity. Colonel John Warden explains that, "it is the only element of the enemy--whether a civilian at the seat of government or a general directing a fleet--that can make concessions."[15] Actually killing or overthrowing the existing enemy government is usually not the desired end of a strategic bombing campaign. It is neither necessary nor realistic to attempt to do so. Instead, the purpose of strategic bombing is to convince the enemy leadership to end the conflict because further action is impossible and concessions are appropriate (or force it do so by physically depriving it of the means to wage war).

Most likely, and practicable, is the generation of sufficient political pressure for the enemy leadership to submit to the intended political objectives of the military

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15. Col John A. Warden III, "Employing Air Power in the Twenty-first Century," in *The Future of Air Power in the Aftermath of the Gulf War*, eds. Richard H. Schultz, Jr. and Robert L. Pfaltzgraff, Jr. (Maxwell AFB, AL: Air University Press, July 1992), p. 65.

operation. This was the objective achieved by the nuclear strikes on Hiroshima and Nagasaki at the end of World War II. Killing the victims of these attacks was not the ultimate goal of the application of force. In this case, the additional political pressure brought to bear on the Japanese leadership by the two nuclear strikes proved sufficient to accelerate its capitulation to Allied demands for surrender.[16]

The campaign planner can also target the enemy leadership ring by attacking its command and control (C^2) capability. Taking away the enemy's ability to operate its own military forces by destroying C^2 facilities with air power leaves it unable to defend itself from further attack and more likely to comply with political demands. For example, one of the first targets destroyed by coalition bombers during the Operation Desert Storm air campaign was the Iraqi telephone system. This network was Saddam Hussein's primary means of communication with, and control of, his military forces.[17]

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16. The United States Strategic Bombing Survey, *Summary Report (Pacific War)* (1 July 1946; rpt. Maxwell AFB, AL: Air University Press, October 1987), p. 106.

17. Warden, "Employing Air Power," p. 70.

2. Production

Attacking the second strategic ring entails targeting the enemy's military-related industries, key utility facilities (e.g., electric generating plants and oil refineries), or its access to external sources of these commodities if they are not produced internally. Applying pressure to the production target ring produces two effects that are militarily desirable. First, enemy capability to employ and/or produce military hardware is degraded. Second, life, for the country's citizens, is made increasingly difficult, generating internal political pressure to end the conflict.

Destroying an enemy's military order of battle in the field is the least efficient means of degrading his capability to wage war. Strategic bombing enthusiasts maintain that using air power to strike the factories that produce, assemble, or support this order of battle is more cost-effective. They also affirm that this technique is more decisive since the capability to replace equipment is also diminished. Related targets include facilities that produce fuel or other goods required to employ this equipment in the field. During World War II, Allied bombers began targeting German oil production facilities in May of 1944. As a result, Germany's consumption of fuel exceeded production for the remainder of the war. In fact, attacks on oil refineries were so crippling

to the Germans that they had to plan on the seizure of Allied fuel stores to carry out the doomed Ardennes offensive at year's end.[18]

Disruption of a country's fuel and utility infrastructure also has a profound impact upon the civilian population, particularly in modern, urbanized states. The cessation of normal access to gasoline and electricity for lighting, heating, and cooking in their homes serves as a constant reminder to civilians of the conflict in which their leadership has them embroiled. The strategic bombing model assumes that existing dissent will be amplified under these conditions. Eventually, even the most popular regime will begin to suffer criticism if these conditions persist and it remains unable to do anything to remedy them.

3. Infrastructure

The third most vital category of targets is the enemy's transportation and communication networks. Targets include highways, railroads, canals, airports, and port facilities as well as telegraph lines, satellite up-links, and radio and television stations. The transportation and communication systems of most modern states present the

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18. The United States Strategic Bombing Survey, *Summary Report (European War)* (30 September 1945; rpt. Maxwell AFB, AL: Air University Press, October 1987), pp. 20-23.

campaign planner with an abundance of potential targets. To increase the effectiveness of attacking an enemy's infrastructure, planners target its hubs, junctions, and critical nodes (e.g., rail yards, interchanges, and bridges). Like the destruction of production-related targets, targeting infrastructure degrades the enemy's capability to fight and imposes hardship upon the civilian populace.

Transportation of troops, supplies, and equipment is necessary to military operations. By denying the enemy the means to carry out this mission, air power isolates and exposes enemy forces. This state of affairs decreases troop morale, weakens enemy forces physically, and increases the relative effectiveness of friendly firepower. During the Korean War, from May to July 1951, Air Force, Marine Corps and Navy bombers engaged in Operation Strangle. Designed to augment and support an Eighth Army offensive, Operation Strangle targeted the seven major Chinese Army supply routes between railheads on the 39th parallel and the front lines. During the Eighth Army's offensive, air power brought traffic on these critical resupply arteries to a standstill. These efforts weakened and demoralized Chinese troops and improved the morale and effectiveness of United Nations (UN) forces.[19]

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19. Robert Frank Futrell, *The United States Air Force in Korea, 1950-1953*, revised ed. (Washington, DC: Office of Air Force History, 1983), pp. 324-325, 437. For a different

The strategic bombing model presumes that the destruction of highways, airports, and waterways takes a toll on the civilian population as well. Fresh produce and other goods brought into cities from rural areas become scarce and extremely expensive. The ability to move freely about one's own country is also lost. Civilians desiring refuge in remote regions are forced to stay in built-up areas, increasing their frustration. The loss of commercial telecommunications networks results in disorientation. The lack of timely news about the status of the conflict generates anxiety. Overall, the loss of mobility and information, through destruction of the state's infrastructure, creates discomfort for the civilian populace, leading to political pressure on the government to terminate the conflict and relieve the situation.

4. Population

Not since World War II have air campaign planners considered directly targeting people (the fourth strategic ring). As Colonel Warden attests, "Moral objections aside, it is difficult to attack the population directly because targets are too numerous and in many cases--especially in a police

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estimation of Operation Strangle's effectiveness see M.J. Armitage & R.A. Mason, *Air Power in the Nuclear Age*, (Urbana, IL: University of Illinois Press, 1983), pp. 35-36.

state--the population may be willing to suffer grievously before it will turn on its own government."[20] However, campaign planners still consider indirect attacks on the population viable. These indirect attacks target civilian morale.

Destruction of the state's production capabilities and infrastructure place an enormous amount of stress upon the general populace. Additionally, the destruction of purely military targets can be accomplished in a manner which influences civilian morale. Lieutenant General Charles Horner, Desert Storm's Air Component Commander, stated that he scheduled night-time strikes against military targets near urban areas to remind Iraqis that a war was being fought and Saddam Hussein was powerless to contain it.[21]

5. Fielded Forces

There is a certain logic to the belief that enemy armed forces are the most important target for any air campaign. However, the strategic bombing model treats military forces as nothing more than a means to protect one's own centers of gravity (or to threaten those of an enemy). Colonel Warden states that fielded forces are considered *vital*

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20. Warden, "Employing Air Power," p. 66.

21. Julie Bird, "Horner: Further AF Role in Gulf Not Needed," *Air Forces Times*, 18 March 1991, p. 8.

only because, "One can persuade a state to make concessions by reducing its fielded military forces. Indeed if all of its fielded forces are destroyed, it may have to make the ultimate concession simply because the command element knows that its inner rings have become defenseless and open to destruction."[22] The Desert Storm air campaign stands out as perhaps the most decisive application of air power ever used against an enemy's fielded forces. Prior to initiation of any ground offensive, coalition air power pounded the Iraqi defense lines for 40 days. As Major Mark Clodfelter colorfully described the effects of the sustained air attack, "The Iraqi army had become an eggshell that cracked once it was tapped by advancing allied ground forces."[23] But, no matter how effective it may be, the use of air assets to destroy enemy military equipment directly (on the front) is much more expensive than destroying it at or near its source of production. Since the purpose of a strategic bombing campaign is to bring the conflict to a favorable resolution as soon as possible, attacking the enemy's least vital center of gravity is the strategic bombing advocate's last choice.

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22. Warden, "Employing Air Power," p. 67.

23. Maj Mark Clodfelter, "Of Demons, Storms, and Thunder: A Preliminary Look at Vietnam's Impact on the Persian Gulf Air Campaign," *Airpower Journal*, Winter 1991, p. 27.

C. APPLICATION

Strategic bombing disciples assert that the airplane's ability to avoid geographic and military obstacles and deliver ordnance onto a target makes it the ideal platform to attack enemy centers of gravity. The first step in any strategic bombing campaign is attainment of air superiority. Once allowed to operate freely over enemy territory, air assets can focus on the destruction of vital targets in the most efficient manner. Target selection is based upon the intended political objectives of military action, the disposition of enemy and friendly armed forces, and target access.

1. Air Superiority

Gaining the ability to operate one's aircraft without opposition is the first step in waging a campaign of strategic bombing. According to Air Force Manual (AFM) 1-1:

> Aerospace control normally should be the first priority of aerospace forces. Aerospace control permits aerospace and surface forces to operate more effectively and denies these advantages to the enemy. Absolute control of the environment is the ideal aim of aerospace control operations.[24]

Air power proponents maintain that attempting to accomplish tasks secondary to air superiority without first achieving it

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24. AFM 1-1, I, 10.

is a dangerous diversion of resources.[25] The first targets attacked in *any* strategic bombing campaign are air superiority, or *counterair*, targets. Even during the small-scale application of strategic bombing, during Operation El Dorado Canyon (Libya, 1986), the first air strikes were designed to achieve a level of air superiority sufficient to accomplish the major objectives of the mission.[26]

Counterair operations entail the destruction and/or neutralization of enemy aircraft and ground-based air defense weapons (i.e., anti-aircraft artillery [AAA] and surface-to-air missiles [SAM]).[27] Counterair targets also include the warning and control systems which support these weapons (e.g., radar sites and command posts) as well as the infrastructure necessary to operate and maintain them (e.g., depots and airfields). Air and ground assets can be employed to attack these targets directly. For example, during the 1973 Arab-Israeli War, Israeli Defense Forces (IDF) employed both naval

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25. Ibid., II, 142 and Col John A. Warden III, *The Air Campaign: Planning for Combat* (Washington, DC: National Defense University Press, 1988), pp. 17-18, 99, 161.

26. White House Statement - April 14, 1986, "U.S. Exercises Right of Self-Defense Against Libyan Terrorism," *Department of State Bulletin*, June 1986, p. 1.

27. For a detailed study of ground-based air defense systems and their impact on air operations see Kenneth P. Werrell, *Archie, Flak, AAA, and SAM* (Maxwell AFB, AL: Air University Press, December 1988).

and ground assets to destroy Egyptian SAM sites.[28] Campaign planners can also choose to defeat counterair weapon systems without actually destroying them. Many airframes in the USAF inventory carry on-board electronic countermeasure (ECM) equipment designed to degrade enemy defenses and attain a level of air superiority sufficient to carry out a single mission.

2. Objectives

A thorough discussion of the connection between political and military objective is too extensive to accomplish here.[29] Objectives are addressed here to highlight the fact that target selection for a broad strategic bombing campaign is contingent upon the intended political-military goals of the application of military force.

The commander establishes military objectives based on the political objectives of the application of air power. The campaign planner then tailors target lists to meet military objectives. If the intent is total annihilation of the enemy state, then all five strategic rings will be struck, probably

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28. See Warden, *The Air Campaign*, p. 19 and Armitage & Mason, p. 134 respectively.

29. For an excellent discussion of this topic see Col Dennis M. Drew & Donald M. Snow, *Making Strategy: An Introduction to National Security Processes and Problems* (Maxwell AFB, AL: Air University Press, August 1988).

with nuclear weapons. The most significant objective yet to be attempted with a campaign of strategic bombing was the unconditional surrender of Axis powers during World War II. In a scenario for unconditional surrender, planners target the production and infrastructure rings of the strategic bombing model. The desired two-fold result of attacking these rings is degradation of the enemy's war-fighting capability and disintegration of its will to continue the conflict. If the use of military force is designed to send the message that a certain action by the enemy will not be tolerated, then only one or two rings might be struck. Usually, ring five is the target of choice because striking military targets tends to generate less international criticism. In an even lower level of conflict, air assets might engage in *gunboat diplomacy*[30] in which no ordnance is actually dropped. Fly-overs or exercises designed to demonstrate resolve target rings one and four. They "attack" the psyche of the leadership and civilian population of the affected state. The extent to which an enemy's centers of gravity are attacked will be in direct proportion to the level of behavior modification required by the political demands on the enemy.

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30. Gunboat diplomacy is defined as the demonstration, threat, or use of limited force for political objectives. See Robert Mandel, "The Effectiveness of Gunboat Diplomacy," *International Studies Quarterly*, March 1986, p. 60.

3. Disposition of Forces

According to strategic bombing disciples, air power can resolve any conflict without the introduction or use of surface forces. However, if the enemy decides to threaten friendly centers of gravity on the ground, or the United States is drawn into a conflict that already involves surface battles, then air power can be applied to interdict enemy forces and support friendly operations.

According to AFM 1-1, "Interdiction disrupts, delays, or destroys an enemy's military potential before it can be used against friendly forces."[31] Air assets assume the interdiction role only when there is credible evidence that enemy military force is going to be used against friendly centers of gravity. Interdiction missions attack military-related targets in the enemy's first, second, and third strategic rings. The intent of interdiction is to block the enemy from using military force before friendly centers of gravity suffer damage. Interdiction is a preventative measure.

Once enemy forces engage friendly centers of gravity directly, air assets are used for close-air support missions. Close air involves the direct destruction of enemy troops and equipment (ring five). The most common form of close air

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31. AFM 1-1, I, 12.

mission is in support of friendly troops engaged in combat with enemy forces.

Strategic bombing advocates consider forcing enemy leadership to concede to friendly political demands to be air power's primary mission. However, they recognize (and assert) that air assets can provide protection for friendly centers of gravity when the situation warrants. Air power provides this protection through interdiction and close-air support missions.

4. Accessibility

The final element of target selection is the accessibility of individual targets. Two factors determine which targets can be reached by air power: capability and authorization. The commander must possess both the necessary resources and valid authorization to strike any given target.

The capability to attack a target depends on the characteristics of available airframes and the nature of the target to be struck. Obviously, to carry out any mission, an aircraft must be able to carry the required bomb load and possess the range to arrive over the target, but the ordnance available must be suited to the target as well. During the Desert Storm air campaign, many targets were destroyed only because coalition air forces possessed specially designed

laser-guided and penetrating munitions.[32] If enemy targets lay outside the operating radius of friendly aircraft, or are sufficiently hardened to resist damage from available munitions, they cannot be destroyed.

Commanders must also have the necessary authority to strike enemy targets. In almost every conflict involving air power, civilian leadership has restricted American air commanders from bombing certain areas for political, diplomatic, or moral reasons. For instance, during the bombing of North Vietnam, President Lyndon Johnson maintained rigid control over which targets could be attacked, personally approving strike lists on a week-to-week basis.[33] The debate over whether this form of control is proper is not relevant to this discussion. What is important is that authorization affects target selection.

Target selection in strategic bombing campaigns is subject to the following constraints: objectives, disposition of forces, and access. Campaign planners design target lists to accomplish the commander's stated military objectives. The strategic bombing model presumes that by applying pressure to

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32. See Richard P. Hallion, *Storm Over Iraq: Air Power and the Gulf War* (Washington, DC: Smithsonian Institution Press, 1992), pp. 303-307. .

33. See Maj Mark Clodfelter, *The Limits of Airpower: The American Bombing of North Vietnam* (New York, NY: The Free Press, 1989), pp. 85, 87-88.

the enemy's centers of gravity, air power can be used to gain the enemy leadership's concession to political demands.

D. SUMMARY

This chapter outlined the strategic bombing model. The primary assumption of strategic bombing is that an enemy has certain centers of gravity which, when destroyed, degrade his capability and will to wage war. Campaign planners employ a model of concentric rings representing an enemy's centers of gravity. Targets are selected, from these categories, to accomplish the commander's stated military objectives. Military objectives are established to achieve the broader political goals of the use of military force.

III. THE DOCTRINAL INERTIA OF STRATEGIC BOMBING

This chapter demonstrates the degree to which strategic bombing is entrenched in the minds of American airmen. It opens with an examination of Giulio Douhet's treatise *The Command of the Air*. It then traces the application of strategic bombing principles, by American air campaign planners, in every major conflict involving air power since World War II. The chapter points out how air power advocates have adamantly maintained the efficacy of strategic bombing even when faced with its failures.

A. DOUHET

Air power historians widely accept the idea that Giulio Douhet's *The Command of the Air* is the genesis of the modern strategic bombing model.[34] Among Douhet's major assertions were: (1) modern war will be total war, involving the civilian

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34. For example see Maj Perry M. Smith, "Douhet and Mitchell: Some Reappraisals," *Air University Review*, September-October 1967, pp. 97-101; Lee B. Kennett, *A History of Strategic Bombing* (New York, NY: Charles Scribner's Sons, 1982), pp. 54-57; Giulio Douhet, *The Command of the Air*, 2nd ed., trans. by Dino Ferrari, ed. by Richard H. Kohn & Joseph P. Harahan (1927; rpt. Washington, DC: Office of Air Force History, 1983), pp. vii-x; and Lt Col Barry D. Watts, *The Foundations of U.S. Air Doctrine: The Problem of Friction in War* (Maxwell AFB, AL: Air University Press, December 1984), p. 5.

populace as well as military forces; (2) air power will be the primary factor in modern war; and (3) air superiority is a prerequisite for an effective air campaign.

Douhet wrote *The Command of the Air* shortly after the end of World War I. The horror and waste of static, trench warfare convinced Douhet that another means must be devised to achieve victory--one which would bring a much swifter end to the fighting. Douhet proposed that the way to win quickly was to avoid the enemy's fielded forces completely. Instead, one should attack directly the enemy's capability to supply and maintain them. Left without a credible defense, the enemy state would soon loose its will to continue the confrontation. Urbanization of the modern state meant that destruction of the enemy's capability to wage war would affect the civilian population as well. Douhet believed that modern conflict would take on "a character of national totality [because] the entire population and all the resources of a nation are sucked into the maw of war."[35]

Douhet maintained that the severe losses of the first World War were caused by an emphasis on defense. To implement his new strategy military thinkers had to stress offensive operations. Douhet claimed that the aircraft permitted this revolutionary change, "Because of its independence of surface

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35. Douhet, p. 5.

limitations and its superior speed--superior to any other known means of transportation--the airplane is the offensive weapon par excellence."[36] To Douhet, the essence of future war-fighting was a nation's offensive bombing capability. Surface forces were auxiliary forces, necessary only to protect the nation from enemy ground and naval forces. Air Force bombers were the single military element that would determine the outcome of the war effort. Douhet argued that since air power was the heart of a nation's defense-through-offense, it followed that a nation stood no chance of victory in war if its Air Force was less capable than that of its enemies:

> To be defeated in the air...is finally to be defeated and to be at the mercy of the enemy, with no chance at all of defending oneself, compelled to accept whatever terms he sees fit to dictate.[37]

From this assumption, Douhet developed his thesis for the necessity of air superiority--"command of the air."

Douhet's perception of air superiority differed from that of today's airmen because effective ground-based air defenses had not been developed. However, his definition is quite similar to that of modern doctrine:

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36. Ibid., p. 15.

37. Ibid., p. 23.

> To have command of the air means to be in a position to prevent the enemy from flying while retaining the ability to fly oneself.[38]

Douhet recognized that the quickest way to deny the enemy use of the air was through counterair operations. He maintained that counterair targets were the first priority in war, but it was the make-up of a nation's Air Force itself that was the only guarantee of command of the air. The Air Force had to maintain sufficient "units of bombardment" to destroy the war-fighting capability of its strongest enemy. Units of bombardment could be determined by measuring the surface area of enemy targets, computing the amount of ordnance required to level this area, and calculating the number of airframes sufficient to deliver this payload.[39] To ensure that bombers would arrive at their destinations, the Air Force also had to maintain sufficient "units of combat." The function of combat units was to defeat any enemy aerial opposition. The required units of combat were determined in a manner similar to units of bombardment starting with the number of pursuit aircraft in the enemy's inventory.[40] Only by maintaining an Air Force large enough to prevail in a conflict with the nation's strongest enemy could command of the air be ensured.

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38. Ibid., p. 24.

39. Ibid., pp. 35-41.

40. Ibid., pp. 41-46.

Douhet's ideas about using aircraft to attack enemy war-fighting capability and will-power planted the seeds for strategic bombing. His assertion, that planners could determine the minimal force required to win any war with air power, lead to the hierarchical categorization of targets that is the strategic bombing model. American air strategists employed Douhet's principles at their very first opportunity--World War II.

B. AWPD-1

On August 4, 1941, General Henry H. Arnold, Deputy Chief of Staff for Air of the Army, assigned the Air War Plans Division (AWPD) the task of designing an air campaign against Germany and Japan. The four member task force chosen to compose the plan was made up of former instructors from the Air Corps Tactical School (ACTS) at Maxwell Field, Alabama.[41] The ACTS was the Air Corps' first formal school of air power doctrine and employment. David MacIsaac, air power historian, summed up the school's fundamental theory of air power:

> the most efficient way to defeat an enemy is to destroy, by means of bombardment from the air, his war-making

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41. Col Harold L. George, Lt Col Kenneth Walker, Major Laurence S. Kuter, and Major Haywood S. Hansell, Jr. made up the AWPD's planning team. Haywood S. Hansell. Jr., *The Air Plan that Defeated Hitler* (Atlanta, GA: Higgins-McArthur, Longino & Porter, Inc., 1972), pp. 60, 69-70.

> capacity; the means to this end is to identify by scientific analysis those particular elements of his war potential the elimination of which will cripple either his war machine or his will to continue the conflict; these elements having been identified, they should be attacked by large masses of bombardment aircraft....such bombing missions having been carried out, the enemy, regardless of his strength in armies and navies, will lack the means to support continued military action.[42]

This set of assumptions was the foundation for the AWPD's plan for the air war against the Axis powers.

AWPD's strategy called for first knocking Germany out of the war. Only then could air power focus on the Pacific theater. The campaign plan developed to defeat Germany was known as AWPD-1. It consisted of a list of 154 targets divided into four categories: (1) German electric power; (2) German transportation systems; (3) German oil and petroleum production complexes and sources; and (4) German fighter defenses.[43] The AWPD noted that overcoming Germany's aerial defenses was an intermediate step to attaining the "optimum effectiveness" of the campaign plan.[44] AWPD planners even determined the exact numbers of airplanes and crewmembers needed to carry out the campaign.[45] The proponents of AWPD-1

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42. David MacIsaac, *Strategic Bombing in World War Two: The Story of the United States Strategic Bombing Survey* (New York, NY: Garland Publishing, Inc., 1976), p. 7.

43. Hansell, pp. 80-88.

44. Ibid., p. 80.

45. Ibid., p. 88.

maintained that within six months the air campaign would, by itself, force the Germans to capitulate to Allied demands. However, unfavorable weather conditions, severe losses to German fighters, and the inability to determine the bombings' impact on German war-fighting capability all contributed to a significant degradation of the air campaign's effectiveness.[46] Instead, it took over four years to bring about Germany's surrender.

Strategic bombing disciples attributed the campaign's limited effectiveness in the European theater primarily to: (1) the diversion of air assets to support ground operations, and (2) problems delivering sufficient airframes and crews to Great Britain.[47] For whatever reasons, strategic bombing was unable achieve victory through the use of air power alone and the question of air power's contributions in Europe is still debated. Air power advocates point to the following lines from the U.S. Strategic Bombing Survey for vindication of their belief in the strategic bombing model:

> Allied air power was decisive in the war in Western Europe. Hindsight inevitably suggests that it might have

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46. For a thorough discussion of the impact of these factors on Allied bombing efforts see Watts, pp. 60-85.

47. See Hansell, pp. 256-258.

been employed differently or better in some respects. Nevertheless, it was decisive.[48]

A realistic appraisal acknowledges that air power provided a vital contribution to Germany's defeat, but victory could not have been won without the participation and cooperation of surface forces.

C. KOREA

In the five years between the end of World War II and the Korean War, the Air Corps gained its independence. It appeared that the new Air Force, free from Army oversight, could now pursue and employ a pure doctrine of strategic bombing. The Air Force would not find this freedom during the Korean conflict.

When American bombers were first ordered to the Korean theater, the Air Force possessed no off-the-shelf plan for an air campaign against North Korea.[49] The Directorate of Intelligence at Strategic Air Command (SAC) immediately went to work drafting a target list for such a campaign. True to doctrine, the plan reflected the belief that destruction of the enemy's war-fighting capability was the quickest means to secure victory. It named five major industrial areas with 18

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48. The United States Strategic Bombing Survey, *Summary Report (European War)*, p. 37.

49. Futrell, p. 186.

major targets as the centerpiece of a strategic bombing campaign against North Korea.[50] Major General Emmett O'Donnell, commander of Far East Air Forces' (FEAF) Bomber Command, predicted that SAC's plan would end the conflict within three months.[51]

General MacArthur's General Headquarters (GHQ) Target Group took limited control over the FEAF's bombers immediately upon their arrival in the Korean theater. When the GHQ Target Group deemed it necessary, FEAF forces were required to halt the strategic campaign and provide support for Eighth Army operations.[52] For their first full month in theater, FEAF bombers were diverted to fulfill GHQ's requests. Finally, on 8 August 1950, they began carrying out SAC's strategic bombing campaign. By 26 September 1950, FEAF bombers destroyed all of North Korea's significant military-related industry.[53] The Air Force now focused on interdiction and close-air support missions and waited for North Korea to fall.

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50. Ibid, pp. 183-185.

51. Robert Frank Futrell, *Ideas, Concepts, Doctrine; Volume One: Basic Thinking in the United States Air Force 1907-1960* (Maxwell AFB, AL: Air University Press, December 1989), pp. 294-295.

52. Futrell, *USAF in Korea*, p. 186.

53. FEAF bombers spared one oil storage facility because of its proximity to the Soviet border. Ibid., pp. 187-195.

North Korea was able to continue fighting, despite destruction of its key industries, because the Chinese were supplying its war efforts. Lacking authorization for strikes across the Chinese border, FEAF bombers continued interdiction and close-air support missions.[54] Frustration over the air campaign's inability to end the conflict, coupled with the Chinese intervention in November 1950, lead FEAF commanders to protest the prohibition of air strikes against targets in Manchuria.[55] Not until 1952 did air commanders again find a role that satisfied their desire to apply strategic bombing principles.

In January 1952, Brigadier General Jacob E. Smart became the new FEAF Deputy Commander for Operations. Smart ordered a new campaign plan that shifted the emphasis of targets struck within North Korea:

> Whenever possible, attacks will be scheduled against targets of military significance so situated that their destruction will have *a deleterious effect upon the morale of the civilian population* actively engaged in the logistic support of enemy forces [emphasis added].[56]

Smart determined that the time had come to target the enemy's will to continue the conflict. At first the Army disagreed, but when General Mark Clark took over as theater commander, in

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54. Ibid., pp. 341-372, 433-474.

55. Ibid., p. 475.

56. Quoted in Clodfelter, *Limits of Airpower*, p. 17.

April, Smart received permission to implement his new strategy termed "air pressure." Clark agreed that an air pressure campaign might be just the way to jump-start the faltering armistice process.[57]

The main targets for the air pressure campaign were a series of irrigation dams which diverted water to North Korea's vital rice crop.[58] The timing of the air pressure campaign matched a threat by President Eisenhower to escalate the conflict by authorizing strikes in Manchuria and introducing nuclear weapons.[59] The Chinese soon agreed to terms acceptable to American leadership. Air power advocates perceived that the air pressure strategy, combined with the threat of a truly unrestricted strategic bombing campaign, had forced the Chinese to concede to American demands.[60]

After the Korean War the Air Force vowed to never again allow its primary mission to be obscured by secondary objectives. The main lesson strategic bombing proponents took

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57. Futrell, *USAF in Korea*, pp. 481-482, 489.

58. FEAF commanders claimed that only those dams which, when destroyed, washed out major portions of nearby railroads and/or highways would be struck. The FEAF feared that a campaign which appeared to be targeting North Korea's means of feeding itself would provide invaluable propaganda material to the Communists. Ibid., pp. 666-669.

59. Clodfelter, *Limits of Airpower*, p. 23.

60. Futrell, *USAF in Korea*, p. 670.

away from Korea's politically shackled air campaign was: prohibitions against attacking the true source of the enemy's war-fighting capability undermine the effect of air power. In Senate hearings about the conduct of operations during the Korean War, General George Stratmeyer, FEAF Commander until June 1951, labeled political restrictions "un-American."[61] In his autobiography, General Curtis LeMay claimed that unrestrained strikes against targets in Manchuria would have kept the Chinese from protracting the war.[62] For strategic bombing enthusiasts, the political restrictions placed on air commanders explained why air power had not been acutely decisive in Korea. This experience strengthened the resolve of those who proclaimed a pure form of strategic bombing.

In the decade after the Korean War, the Air Force's Strategic Air Command went through a rapid growth. SAC consumed most of the Air Force budget as air strategists focused on maximizing American strategic bombing capability.[63] Air Force leadership asserted that in the next conflict Tactical Air Command's (TAC) assets would be solely responsible for carrying out interdiction and close-air

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61. Quoted in Clodfelter, *Limits of Airpower*, p. 25.

62. Curtis E. LeMay with MacKinlay Kantor, *Mission with LeMay: My Story* (Garden City, NY: Doubleday & Company, Inc., 1965), p. 464.

63. See Clodfelter, *Limits of Airpower*, pp. 26-37.

missions.[64] This would leave SAC's bombers free to focus on air power's primary mission--destruction of the enemy's capability and will. The Air Force entered the fray of Vietnam with a renewed conviction in the doctrine of strategic bombing.

D. VIETNAM

In early 1964, it became evident to American policy-makers that the South Vietnamese government was rapidly losing its ability to counter the Vietcong insurgency. In response, President Johnson directed his military leadership to begin drafting plans for possible American intervention to preserve the South Vietnamese state. Both civilian and military leaders viewed North Vietnamese political and logistical support as vital to the Vietcong.[65] This was the primary assumption that drove the Air Force's contingency planning.

Air campaign planners believed that if North Vietnamese support and direction was critical to the Vietcong, then it was North Vietnamese war-fighting capability and will that needed to be targeted. The Air Force refused to repeat the "mistakes" of the Korean War. Throughout the spring and

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64. Futrell, *Ideas, Concepts, Doctrine*, pp. 347-348.

65. Larry E. Cable, *Conflict of Myths: The Development of American Counterinsurgency Doctrine and the Vietnam War* (New York, NY: New York University Press, 1986), pp. 237-271.

summer of 1964, Air Force planners devised a target list for a strategic air campaign against North Vietnam. The plan's target list included 94 industrial facilities and key infrastructure nodes. The strategic air campaign was designed to: (1) reduce North Vietnamese support of communist operations in Laos and South Vietnam, (2) limit North Vietnamese capabilities to take direct action against Laos and South Vietnam, and (3) impair North Vietnam's capacity to continue as an industrial state.[66] Planners asserted that destruction of all 94 targets could (and should) be accomplished within sixteen days of implementing the plan.[67] This plan was the blueprint for the air campaign known as Rolling Thunder.

President Johnson gave tentative approval to the air campaign in February 1965 and strikes began in March.[68] Operation Rolling Thunder continued for the next two-and-a-half years. From the start, the Johnson administration refused to permit a comprehensive campaign against all 94 targets for fear that a massive assault would invoke Chinese or Soviet intervention. Instead, Rolling Thunder progressed through several graduated phases in which different target

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66. Quoted in Col Dennis M. Drew, *Rolling Thunder 1965: Anatomy of a Failure* (Maxwell AFB, AL: Air University Press, October 1986), p. 29.

67. Clodfelter, *Limits of Airpower*, p. 76.

68. Ibid., pp. 59-63.

categories were struck as the intended political-military objectives of the campaign varied over time.[69] Throughout the campaign air commanders continued to press for comprehensive bombing of all targets. At the same time, however, they maintained that air power was taking its toll on the North Vietnamese ability and will to support the Vietcong.

When the Tet Offensive occurred on 30 January 1968, American civilian and military leaders were stunned. The fact that the Vietcong and North Vietnamese could carry out such a massive operation belied assurances of Rolling Thunder's effectiveness. In a frenzied attempt to wring some success out of the air campaign, Johnson heightened the tempo of bombing and varied the types of targets struck for another two months.[70] But by March, Johnson called a halt to the bombing.

In 1972, President Nixon returned to strategic bombing as a means to resolve the conflict in Vietnam. By this time several factors had changed the nature of the conflict: (1) Nixon no longer sought to preserve the South Vietnamese state, he was concerned only with an honorable withdrawal of American forces from Vietnam; (2) the conflict had become a conventional war fought primarily by the North Vietnamese because the

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69. Ibid., pp. 88-92, 92-102, 102-107.

70. Ibid., pp. 102-107.

Tet Offensive had decimated the Vietcong; and (3) American foreign policy-makers no longer feared intervention by China or the Soviet Union.[71]

The target list employed in the 1972 campaigns, known as Linebacker I and II, was virtually the same as that drawn up for Rolling Thunder.[72] However, unlike Rolling Thunder, the Linebacker campaigns were comprehensive and continuous.[73] When the Linebacker campaigns succeeded in convincing the North Vietnamese to sign a peace treaty acceptable to Nixon, air power advocates once again proclaimed that strategic bombing had saved the day.[74] In fact, Linebacker's relative successes convinced many senior military and civilian leaders that a comprehensive strategic bombing campaign could have won the war in 1965.[75]

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71. Ibid., p. 148.

72. Ibid., p. 158.

73. Ibid., pp. 158-163, 184-190.

74. Ibid., p. 201.

75. Ibid., p. ix and Clodfelter, "Of Demons, Storms, and Thunder," pp. 9, 31.

E. DESERT STORM

During the two decades following the Vietnam War, airmen deliberated the real value of strategic bombing.[76] In three major conflicts, strategic air campaigns had not been able to achieve victory in the manner predicted by Douhet and his disciples. Strategic bombing adherents continually attributed air power's lack of decisiveness to factors beyond the control of planners and operators.[77] However, in the fall of 1990 Saddam Hussein provided the U.S. Air Force with a chance to validate its strategic bombing doctrine.

The original plan for the air campaign against Iraq, known as Instant Thunder, was approved by General Norman Schwarzkopf on 10 August 1990.[78] The plan was a classic expression of strategic bombing principles. Instant Thunder was designed to occur in three phases. The first phase established air superiority over the Iraq-Kuwait theater. The target list included traditional counterair targets (e.g., airfields and

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76. See Maj Earl H. Tilford, Jr. "The Right Reaction: A Consideration of Three Revisionists," *Airpower Journal*, Summer 1989, pp. 72-79.

77. For example see Ulysses S. Grant Sharp, *Strategy for Defeat: Vietnam in Retrospect* (San Rafael, CA: Presidio Press, 1978).

78. Edward N. Luttwak, "Air Power in U.S. Military Strategy," in *The Future of Air Power in the Aftermath of the Gulf War*, p. 25.

military C^2 facilities) as well as air defense weapons systems. The second phase of the campaign targeted military-related and civilian infrastructure as well as defense industries. This phase, the most intensive, targeted the Iraqi war-fighting capability and will. Phase three turned to Iraq's fielded forces with interdiction and close-air missions. The entire campaign was expected to be completed in a matter of weeks.[79]

The results of the 40 day long aerial assault were truly impressive. Iraq was left with little means to resist a coalition ground offensive. General Merrill A. McPeak, Air Force Chief of Staff claimed, "This is the first time in history that a field army has been defeated by air power."[80] Air power advocates proclaim that Desert Storm marks a watershed in how wars will be fought. Lt Col Price Bingham went as far as to state that:

> Perhaps the most important lesson the U.S. military could learn from Desert Storm is that it needs to change its doctrine to recognize that air power can dominate modern conventional war....surface forces are still very

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79. In fact, all three phases were carried out simultaneously because of the abundance of aircraft available to coalition air commanders. Ibid., pp. 25-26.

80. Quoted in Julie Bird, "McPeak: 'Brilliant....air deception,'" *Air Force Times*, 25 March 1991, p. 8.

> important, but campaign success now depends on superiority in the air more than it does on surface superiority.[81]

Although some air power advocates may have exaggerated the implications of the Desert Storm air campaign, there is little doubt that Instant Thunder was vital to the achievement of victory in the Gulf War. The unprecedented success of an air power campaign founded on the assumptions of strategic bombing has given, to those who seek it, an ultimate validation to the model. For those strategic bombing advocates who foundered during the 20 years after the Vietnam War, Desert Storm provides concrete proof that the beliefs of Douhet *et alia* are correct.

F. SUMMARY

The strategic bombing paradigm is the result of over 70 years of doctrinal development and refinement. The model's roots lie in the work of air power theorist Giulio Douhet. American air strategists adopted Douhet's assertions and applied them in every major air campaign since World War II. Strategic bombing adherents have continually maintained the efficacy of the model even when faced with its limitations.

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81. Lt Col Price T. Bingham, "Air Power in Desert Storm and the Need for Doctrinal Change," *Airpower Journal*, Winter 1991, p. 33.

For air power advocates, the Desert Storm air campaign serves as the ultimate validation of strategic bombing principles.

IV. STRATEGIC BOMBING AND LOW-INTENSITY CONFLICT

This chapter begins with a discussion of the emerging international security environment that emphasizes the growing relevance of low-intensity conflict to U.S. national security interests. It then examines the nature of LIC and argues against the use of the strategic bombing model in this environment. Two characteristics of low-intensity conflict undermine the strategic bombing model: (1) the vital center of gravity in LIC is social-political in nature, it is not embodied in the enemy's leadership element; and (2) the traditional targets for a strategic air campaign are too diffuse and abstract within a LIC scenario to be attacked effectively by air power.

A. THE EMERGING SECURITY POSTURE

The collapse of the Soviet Union in late 1991 brought the Cold War to a close and altered the security environment facing the United States like no other single event since World War II. Containment of communism is no longer the primary focus for U.S. military doctrine and strategy. Now American policymakers are calling on the U.S. military establishment to train for and conduct operations that have never

been considered part of the military's domain. In a realm termed low-intensity conflict, American armed forces are carrying out an increasingly diverse set of new missions.

Field Manual 100-20/Air Force Pamphlet 3-20, *Military Operations in Low Intensity Conflict*, defines LIC as "political-military confrontation between contending states or groups below conventional war and above the routine, peaceful competition among states."[82] The actors in LIC tend to be non-government organizations (NGOs) vying with an established government for power or operating outside the bounds of institutionalized law. Rather than seeking to change the existing system from within, LIC actors demand a novel social-political organization or structure.[83] Low-intensity conflicts are often viewed as sources of instability rather than open warfare.[84]

The new international community, with its emphasis on open borders and free markets, provides an environment in which the

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82. Field Manual (FM) 100-20/Air Force Pamphlet (AFP) 3-20, *Military Operations in Low Intensity Conflict* (Washington, DC: Departments of the Army and Air Force, 1990), p. 1-1.

83. See Chalmers Johnson, *Revolutionary Change*, 2nd ed. (Stanford, CA: Stanford University Press, 1982), pp. 116-121.

84. Sam C. Sarkesian, "The American Response to Low-Intensity Conflict: The Formative Period," in *Armies in Low-Intensity Conflict: A Comparative Analysis*, eds. David Charters and Maurice Tugwell (London: Brassey's Defense Publishers, 1989), p. 45.

LIC actor can operate with more freedom than ever before. As international interdependence grows, a given source of instability will produce negative effects within a wider and wider circle of influence. As such, the LIC threat presents itself as an increasingly important factor in the U.S. security picture.

B. THE NATURE OF LOW-INTENSITY CONFLICT

The assumptions underlying the strategic bombing model make it an inappropriate framework for the application of air power in LIC operations. The strategic bombing model is based on the premise that the most vital center is enemy leadership. In LIC, the vital center of the conflict lies within the social-political fabric of the affected state. Furthermore, targets struck in a strategic air campaign are less tangible than those found in the conventional environment.

1. The Vital Center in LIC

The strategic bombing model reflects Sam Sarkesian's assertion that the primary tenet of American military doctrine has been the capability to bring superior firepower to bear on the enemy. Sarkesian observes that

> In the American scheme of things, war tends to be viewed as a technological and managerial conflict, in which face-to-face combat and conflict involving masses of troops engaged against each other is, in the main, subordinate to the ability to bring to bear sophisticated weapons on the battlefield through electronic commands and machine

> oriented strategy and tactics to disrupt enemy formations.[85]

This view is inappropriate for the low-intensity conflict because the center of gravity of the contest lies not on the battlefield but with some issue within the social-political system.[86]

Field Manual 100-20/Air Force Pamphlet 3-20, *Military Operations in Low Intensity Conflict*, states "Chief among the dynamic forces that contribute to LIC are change, discontent, poverty, violence, and instability."[87] Many social scientists have chronicled how social-political forces can generate conflict classified as LIC.[88] Insurgencies in

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85. Sam C. Sarkesian, "Low-Intensity Conflict: Concepts, Principles, and Policy Guidelines," in *Low-Intensity Conflict and Modern Technology*, ed. Lt Col David J. Dean (Maxwell AFB, AL: Air University Press, 1986), p. 14.

86. For accounts of how the U.S. Army suffers from this same operational bias see Andrew F. Krepinevich Jr., *The Army and Vietnam* (Baltimore, MD: Johns Hopkins University Press, 1986) and David W. Hogan, *Raiders or Elite Infantry?: The Changing Role of the U.S. Army Rangers from Dieppe to Grenada* (Westport, CT: Greenwood Press, 1992).

87. FM 100-20/AFP 3-20, p. 1-2.

88. For example see Chalmers A. Johnson, *Peasant Nationalism and Communist Power: The Emergence of Revolutionary China* (Stanford,CA: Stanford University Press, 1962); Samuel P. Huntington, *Political Order in Changing Societies* (New Haven, CT: Yale University Press, 1968); James C. Scott, *The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia* (New Haven, CT: Yale University Press, 1976); and Misagh Parsa, *Social Origins of the Iranian Revolution* (New Brunswick, NJ: Rutgers University Press, 1989).

Vietnam, El Salvador and Great Britain were all the result of a perceived ineffective and/or oppressive regime. Peacemaking operations in Cambodia and Somalia were required because failed states resulted in the resurgence of inter-ethnic strife. The *campesinos* of Bolivia and Peru who grow *coca* do so because it is their only viable means to earn a living. Some social-political ill is always the source of conflict in LIC and it is this very issue that represents the vital center of gravity in LIC.

The government is most often blamed for social-political problems. Therefore, any application of military force by the government (or in support of it) must be carried out delicately. The most likely result of heavy-handed tactics, designed to force LIC actors into submission, is aggravation of an already volatile situation. LIC campaigns that do not address, or at least recognize, the underlying issue(s) generating instability are doomed to failure from the start.

2. Leadership in LIC

The strategic bombing model dictates that an enemy's "command element' is the most important target of a military campaign. However, in LIC, the leadership element is nebulous and/or very difficult to target. Attempting to resolve the conflict by applying pressure to this inherently amorphous

center of gravity will therefore prove ineffective or even counter-productive.

LIC is carried out by organizations similar to what Ken Jowitt terms "Movements of Rage;"

> Movements of Rage are nihilistic political responses to failure; the failure of the "Third World" to create productive economies, equitable societies, ethical elites, and sovereign nations. They are desperate responses to the fact that nothing seems to work.[89]

This type of organization is not susceptible to pressure placed on its "leadership" for several reasons. First of all, it is a grass-roots movement. If the current leaders appear to waiver from stated goals or lean toward compromise, they will be replaced.[90] Second, the movement's driving ideology is highly emotional. LIC actors often rely on superficial, emotional appeals to stimulate their members.[91] Therefore, LIC actors are not generally disposed to compromise or accommodation. In fact, they usually possess a "do or die" mentality.[92] Finally, applying pressure to the leadership

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89. Ken Jowitt, *New World Disorder: The Leninist Extinction* (Berkeley, CA: University of California Press, 1992), p. 275.

90. J. Bowyer Bell, *The Secret Army: The IRA, 1916-1979* (Dublin: Poolbeg Publishers, 1990), pp. 363-367.

91. See Sir Robert Thompson, *Defeating Communist Insurgency: The Lessons of Malaya and Vietnam* (New York, NY: Frederick A. Praeger, Publishers, 1966), pp. 21-23.

92. For example see Che Guevara, *On Guerrilla Warfare* (New York, NY: Praeger, 1961), pp. 11-12.

element of a LIC organization generates hostility from neutral or outside parties because LIC actors portray themselves as raising legitimate grievances. For instance, if a revolutionary movement claims to be fighting for even income distribution, the general populace will view any bid to degrade the group's ability to carry on the conflict as persecution of their "saviors."[93]

Employing air power to pressure leadership into making concessions has proven ineffective in the LIC environment. On 14 April 1986, Air Force and Navy fighter-bombers took part in an attack on Libya known as Operation El Dorado Canyon. In this classic application of strategic bombing, planners selected targets to degrade Colonel Muammar Qadhafi's capability and will to support terrorist activity against American targets.[94] Citing an immediate drop in the level of terrorist attacks carried out against Americans, El Dorado Canyon was touted as a success by U.S. civilian and military leaders (especially Air Force leadership). Yet, within five months, Americans were again becoming targets for terrorist

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93. Bynum E. Weathers, "Factors Affecting the Emergence of Low-Intensity Conflict in Latin America," in *Low-Intensity Conflict in the Third World*, ed. Lewis B. Ware (Maxwell AFB, AL: Air University Press, August 1988), p. 85.

94. White House Statement - 14 April 1986, p. 1.

attacks.[95] Not only did this approach fail to accomplish its stated objectives but also did little to address the underlying reason why Americans were the target of terrorist attacks.

3. Production and Infrastructure in LIC

Strategic bombing advocates assert the swiftest route to victory is to strike the enemy's production and infrastructure centers of gravity. This method of attack degrades the enemy's capability to wage war and erodes their will to fight. However, the means of production and infrastructure in the LIC environment are most often too primitive to be targeted effectively.

Resources, in the form of food and manpower, are frequently "produced" through coercive taxation of the local population.[96] Targeting this source of production is morally and tactically impossible. LIC actors also routinely procure weapons and munitions on the "black" market or they simply steal them.[97] As a result, there is no practical way to target this type of supply line with aircraft.

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95. Stewart Powell, "Terrorism's Grim Upsurge," *U.S. News and World Report*, 22 September 1986, pp. 32-35.

96. Samuel Popkin, *The Rational Peasant: The Political Economy of Rural Society in Vietnam* (Berkeley, CA: University of California Press, 1979), pp. 224-227.

97. Bell, pp. 4-6, 370-374, 392, 398, 436-440, 446.

Infrastructure generally consists of dirt paths and roads through rough terrain or small overgrown waterways. Human and animal labor are usually employed to transport equipment and supplies.[98] If accurate intelligence is available to determine which routes are used, aerial attack results in the creation of redundant routing. Furthermore, the damage done to primitive roadways by bombing is minimal and easily repaired.[99] Targeting these forms of "industry and transportation" is not only marginally effective, it also tends to generate a political "backlash" within the local populace that further aggravates the conflict to the advantage of the rebellion and the detriment of the government.

Operation Rolling Thunder was designed to destroy North Vietnam's capability and will to support the Vietcong war effort by targeting the North's industry and infrastructure. Operating under the flawed assumption that the Vietcong insurgency could not survive without large doses of support from the North Vietnam,[100] campaign planners targeted North Vietnamese highways, bridges, electric generating plants and oil production facilities in an attempt to end this "support."

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98. Jon M. Van Dyke, *North Vietnam's Strategy for Survival* (Palo Alto, CA: Pacific Books, 1972), pp. 34-43.

99. Ibid., pp. 44-45, 48-49.

100. See Note #65.

For three years, American and South Vietnamese bombers carried out the strategic air campaign against North Vietnam. Throughout the operation, Air Force leadership proclaimed the efficacy of bombing North Vietnamese targets. However, the Tet Offensive, on 30 January 1968, served as testimony to Rolling Thunder's actual effectiveness. Relying on strategic bombing to resolve the conflict in Vietnam distracted civilian and military leadership from developing a comprehensive program to address the underlying social and political issues that were the source of unrest in Vietnam--mainly a brutal, ineffective South Vietnamese government.

4. Population in LIC

According to the strategic bombing model, attacks on enemy centers of gravity should be designed to disrupt the lives of the general population. The model assumes that disruption of their daily routines will cause the populace to apply political pressure on the leadership element to end the conflict. However, the nature of LIC is such that the populace is already under considerable stress. Low-intensity conflicts are generally manifestations of groups seeking relief from that stress. Putting more pressure on the populace will only drive them further into the arms of the opposition.

Another characteristic of low-intensity conflict is the blurring of lines between innocent civilians and fielded forces. Timothy Wickham-Crowley writes that

> In modern conventional war...combatants, civilian populations, and support systems are clearly defined. In situations of guerrilla warfare--and Vietnam serves as the clearest case--*the distinction between combatant and civilian is intentionally blurred by the guerrilla fighter* [emphasis added].[101]

Unfortunately, governments often take a "direct approach" when targeting civilians in the low-intensity environment because of the inability to distinguish between rebel and innocent civilian. Although not practiced by U.S. forces, a government conducting counterinsurgency operations, with significant aid from the American military, recently resorted to this tactic. In 1984, the Salvadoran Air Force carried out a bombing campaign which indiscriminately targeted both guerrillas and the local populace in areas deemed sympathetic to the Farabundo Marti Front of the National Liberation (FMLN).[102] *Any* application of air power which targets the civilian populace directly totally undermines the broader LIC campaign.

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101. Timothy Wickham-Crowley, *Exploring Revolution: Essays on Latin American Insurgency and Revolutionary Theory* (New York, NY: M.E. Sharpe, Inc., 1991), pp. 82-83.

102. Suzanne M. Heigh, "Counterinsurgency Strategies for Effective Conflict Termination: U.S. Strategies in El Salvador," Thesis. Naval Postgraduate School, 1990, p. 155.

5. Fielded Forces in LIC

The rebel often begins the conflict in a position inferior to the government's in terms of resources and firepower. In this sense, LIC pits the weak against the strong. Throughout the history of armed conflict, when one side has been at a rather large disadvantage in terms of military strength, it has migrated toward tactics known broadly as guerrilla warfare.[103] Indeed, guerrilla warfare appears to be a common factor in every form of modern low-intensity conflict. Peacekeepers in Somalia and Cambodia, peacemakers in Bosnia-Herzegovina, and counter-drug teams throughout the Andean region all face a guerrilla threat. Terrorists practice their own brand of guerrilla warfare known as "urban guerrilla war" and counter-guerrilla operations are "a given" in counterinsurgency.

The prevalence of guerrilla warfare in LIC poses a problem for air power. From the earliest attempts to do so, the use of aircraft to conduct offensive operations against guerrillas has proven futile. Guerrillas choose the time and the place to fight. They travel in formations too small to be acquired visually from the air. Or, as previously discussed, guerrillas look too much like the civilian populace to be

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103. See Lewis H. Gann, *Guerrillas in History* (Stanford, CA: Hoover Institution Press, 1971).

reliably targeted from the air. Only when guerrilla forces engage friendly ground forces can they be targeted by aircraft.

From 1927 to 1933, the U.S. Marines used aircraft in counterinsurgency operations against Augusto Sandino in Nicaragua. Marine Corp aviators scored an initial success, in November 1927, when they surprised rebel troops at a main guerrilla stronghold.[104] However, after this costly mistake, Sandino's troops turned to hit-and-run tactics and avoided concentrating in large encampments.[105] The guerrillas were never again targeted effectively by aircraft for the remainder of the American presence in Nicaragua unless they were engaged in open operations against friendly ground forces.[106]

C. SUMMARY

Within the security environment emerging in the wake of the Cold War, the U.S. military is going to be tasked with a greater role in low-intensity conflict. The traditional framework for the application of air power--strategic

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104. Capt Kenneth A. Jennings, "Sandino Against the Marines," *Air University Review*, July-August 1986, pp. 86-88.

105. Ibid., p. 92.

106. Ibid.

bombing--is inappropriate for LIC operations. This is so because strategic bombing ignores the social-political nature of LIC. Also, the targets struck in strategic air campaigns are diffuse, amorphous, or non-existent in the low-intensity environment. Strategic bombing is therefore more counter-productive than it is effective when applied to a low-intensity conflict scenario.

V. EMPLOYING AIR POWER IN LOW-INTENSITY CONFLICT

In 1970, Nathan Leites and Charles Wolf published an essay on the nature of insurgent conflicts.[107] Leites and Wolf developed a systemic model for insurgency that can be generalized to other categories of LIC.[108] They outlined a strategy for defeating insurgent systems by focusing on their vulnerabilities. In essence, they provided a framework for LIC operations that attacks the opponent's centers of gravity. Air power can make vital contributions within this framework, but its application focuses more on the airplane's ability to support ground operations and less on its capability to carry and drop ordnance.

A. LEITES AND WOLF: A NEW FRAMEWORK

In 1970, Leites and Wolf published *Rebellion and Authority*. The study described emerging rebellion as a system and an

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107. Nathan Leites and Charles Wolf, Jr., *Rebellion and Authority: An Analytic Essay on Insurgent Conflicts* (Chicago, IL: Markham Publishing Company, 1970).

108. A survey of actors in the various categories of LIC demonstrates that they share many common traits--similar organizational structures, employment of violence and coercion, a passionate ideology, and use of social-political grievances to legitimate their existence and methods. For instance see FM 100-20/AFP 3-20, pp. 2-0 - 2-7, 3-1 - 3-6.

organizational technique, and explained the process of countering a rebellion in terms of weakening its organization while strengthening the structure of local authority.[109] The Leites and Wolf framework targets the rebel organization's centers of gravity and addresses the underlying social-political causes of unrest. They outlined four methods to defeat a rebellion that combine to make up a comprehensive low-intensity campaign.

1. LIC as a System

Leites and Wolf based their model on the primary assumption that "movements, as operating systems, require that certain inputs be converted into certain outputs, or activities."[110] A LIC "system" must receive inputs, in the form of money, manpower, supplies and intelligence, in order to survive. These inputs come from both inside (endogeny) and outside (exogeny) the relevant theater.[111] For a movement in its infancy, endogenous inputs are usually limited to food, recruits, and some level of tolerance by the civilian populace. However, as the system matures, endogenous inputs take the form of political support and loyalty. Initially food and recruits are gained through coercion or payment. As the movement develops momentum, the rebel organization attempts to

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109. Leites and Wolf, p. 4.

110. Ibid., p. 32.

111. See Figure 2.

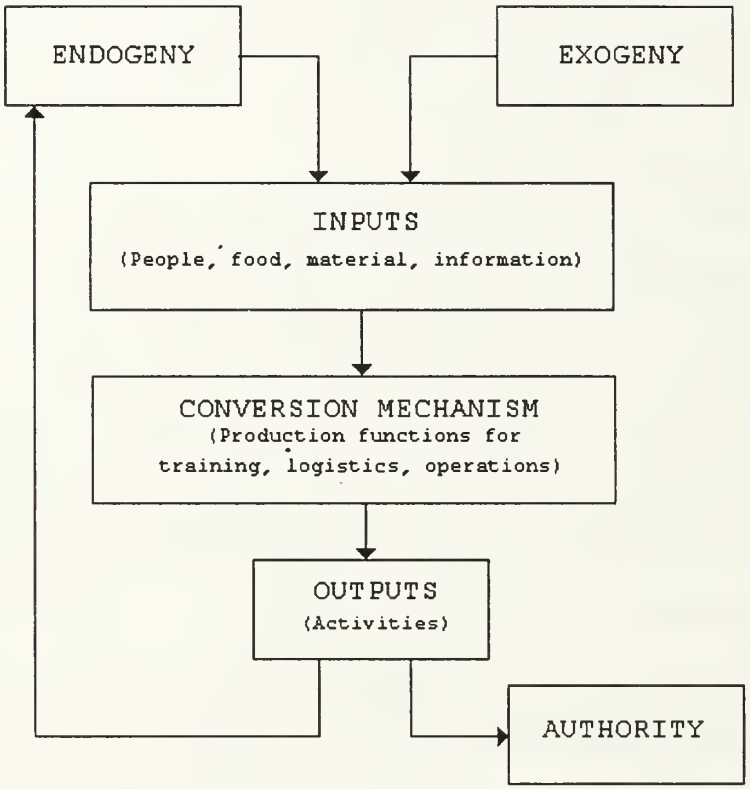

Figure 2. Insurgency as a System
(*Rebellion and Authority*, p. 35)

persuade the general populace to provide support without payment or coercion.[112] Many systems receive some degree of support from external sources. This form of support is predominately financial and logistic support and tends to taper off as the system matures.[113]

To endure, the LIC system must convert inputs to useful, effective outputs. Leites and Wolf assert that an efficient organization is the key to an effective "conversion mechanism."[114] Such an organization requires branches dedicated to personnel, financial, and logistic matters, as well as intelligence, communications, and operations. A LIC system must maintain a bureaucracy that mirrors the government's civilian and military administrations to generate effective outputs.

Outputs are designed to perform one of two functions: (1) attack the government, or (2) generate support for the system.[115] For instance, a propaganda campaign accusing local officials of corruption may be devised to undermine the government's credibility. Alternatively, a guerrilla offensive could be carried out to attrite government security forces. Rebels also generate "positive" outputs in order to gain

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112. Leites and Wolf, p. 33.

113. Ibid.

114. Ibid., p. 34.

115. Ibid.

popular support. They build schools and clinics in rural villages. They also provide basic services like arbitration in local disputes, which government institutions are too distant or unconcerned to deliver. Effective outputs build support for the LIC actor and weaken the established government.

2. Countering the LIC System

Conceptualizing the LIC threat as a dynamic, systemic process allows the strategist to visualize several areas where the mechanism can be "broken." Leites and Wolf outlined four "tasks" that make up a comprehensive LIC campaign: (1) interdict inputs, (2) disrupt the conversion process, (3) reduce outputs, and (4) build the government's resistance to the LIC actor. Each component of this approach attacks the LIC system by applying pressure where it is especially vulnerable. In other words, Leites and Wolf identified and targeted the centers of gravity in low-intensity conflict.

Although the strategy that Leites and Wolf outline shares the same underlying tenet as strategic bombing (i.e., attacking the enemy's centers of gravity), they recognized that LIC and conventional operations cannot be carried out by the same means:

> The *types* of force, and the *types* of political actions that are most relevant in determining outcomes, are likely to differ significantly between [low-intensity conflict] and other wars. Military techniques that work effectively in [LIC] are not likely to be effective in other wars, and political techniques and strategies that work in [LIC] are

likely to differ from those that work in other kinds of war.[116]

Leites and Wolf viewed countering the LIC threat more as police work than as traditional military operations.[117] However, they maintain that LIC campaigns can, and should, be carried out by military forces--as long as the military recognizes that LIC operations require a different frame of reference than conventional warfare.[118] Leites and Wolf also recognize the need to address the social-political issue(s) causing unrest when developing a LIC campaign.[119]

a. Interdicting Inputs

Targeting inputs means raising the unit cost of available resources or simply reducing the amount of resources available to the LIC system. According to Leites and Wolf, methods of input interdiction include "construction of barriers that impede the movement of people or supplies from a source to a destination; and preemptive buying programs that try to engage the available suppliers of particular inputs so that these goods are less readily available."[120] A successful campaign of input interdiction causes the system to

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116. Ibid., p. 72.

117. Ibid., p. 74.

118. Ibid., pp. 137-139.

119. Ibid., pp. 73-74, 83.

120. Ibid., p. 36.

divert some of its energy from generating outputs to dealing with "production" issues.[121] The "Malayan Emergency" provides an example of successful input interdiction. In 1952, the British took aim to hamper the Malayan People's Liberation Army (MPLA) guerrillas by denying them access to food produced by the local populace. All sales of food items were strictly monitored and recorded; canned goods were opened upon their purchase; meals were served *en masse* under police supervision; and field workers were searched for food upon entering and leaving their villages.[122] The effectiveness of this campaign was evidenced by a marked decrease in guerrilla activity and the large number of subsistence farms that sprang into existence in communist-held territory.[123]

b. Disrupting Conversion

Targeting the LIC system's conversion mechanism means disrupting its organization. Leites and Wolf listed the following techniques for reducing a LIC organization's efficiency: "creating distrust and frictions within [the] organization by planting rumors; attracting defectors (particularly

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121. Ibid., p. 77.

122. See Richard Stubbs, *Hearts and Minds in Guerrilla Warfare: The Malayan Emergency 1948-1960* (Oxford: Oxford University Press, 1989),. pp. 166-168 and John Coates, *Suppressing Insurgency: An Analysis of the Malayan Emergency, 1948-1954* (Boulder, CO: Westview Press, 1992), pp. 150-157.

123. Cable, *Conflict of Myths*, p. 87.

those from the higher ranks in [the] organization); disseminating credible misinformation about the behavior of [the group's] leadership; and generally raising the noise level in [the group's] information system."[124] A most effective means to disrupt the LIC organization is the waging of propaganda campaigns that portray the rebel's life as harsh and simultaneously make the option to defect appear attractive through incentives.[125] In the early 1980s, the Italian government achieved a dramatic success with a campaign of this sort directed against the Red Brigade terrorist organization. In December 1979, the Italian government announced sharp increases in the punishment for individuals convicted of terrorist crimes, while, at the same time, offering light sentences to Red Brigade members who cooperated with the police.[126] Terrorists who turned themselves in, known as the *pentiti* (or the repentant), provided information to police that devastated the Red Brigade and accelerated its downfall.[127]

c. Reducing Outputs

In the Leites and Wolf framework, targeting outputs comes closest to a conventional role for military

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124. Leites and Wolf, p. 36.

125. Ibid., p. 80.

126. Richard Drake, *The Revolutionary Mystique and Terrorism in Contemporary Italy* (Bloomington, IN: Indiana University Press, 1989), p. 105.

127. Ibid., pp. 135-152.

assets. The application of military might is implied by the counter-force operations necessary to attack system outputs. However, Leites and Wolf maintained that, in the LIC arena, "the application of firepower from ground and air...depends especially on accurate intelligence, so that targeting error in the use of such firepower is reduced."[128] Leites and Wolf affirmed that because of the political nature of low-intensity operations "obtaining information that enables key figures in the movement to be seized or eliminated may be...more important...in [LIC] than in conventional conflicts."[129] The most effective counter-force campaign targets the LIC organization's cadre for capture. The Phoenix program in Vietnam represents just such a campaign. Carried out from 1967 to 1972, Phoenix targeted the Vietcong infrastructure through the use of intelligence information (mostly gained from recent Vietcong defectors). Although Phoenix's ultimate success was limited by several factors (e.g., abusive and incompetent South Vietnamese interrogators), it remains a model for the type of counter-force campaign that Leites and Wolf suggested.[130]

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128. Leites and Wolf, p. 36.

129. Ibid., p. 82.

130. For a detailed analysis of the successes and failures of Phoenix see Dale Andrade, *Ashes to Ashes: The Phoenix Program and the Vietnam War* (Lexington, MA: Lexington Books, 1990). For a personal account of one Phoenix advisor's experiences in the field, see Stuart Herrington, *Silence Was A Weapon: The Vietnam War in the Villages* (New York, NY: Ivy

d. Strengthening Government

Leites and Wolf outlined several methods to strengthen the government's resistance to a LIC threat. Defensive measures (physical fortifications and barriers as well as increasing the size and capability of security forces) are only part of the answer.[131] The most important and most efficient means available to thwart any LIC threat is to increase the effectiveness of government:

> [T]he basic requirement for increasing absorptive capacity for the rebellion's outputs is to strengthen authority itself: its capacity to be informed, undertake programs, control, protect, punish, and act and react vigorously, quickly, and intelligently.[132]

This approach not only forces the government to acknowledge and deal with the root cause of the conflict, it also increases the government's capability to do so. A government able to administer effective political, social, and economic programs can contend with most of the problems that cause low-intensity conflict. Methods for fortifying a government include training programs to "professionalize" the military, foreign aid packages to deal with external debt, and agricultural and industrialization programs designed to help the country support itself. A comprehensive campaign employing these techniques, termed Internal Defense and Development

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Books, 1982).

131. Leites and Wolf, p. 37.

132. Ibid., p. 83.

(IDAD) Strategy, is outlined in FM 100-20/AFP 3-20 *Military Operations in Low-Intensity Conflict*. This strategy integrates civilian and military training with aid programs.[133] The primary aim of the IDAD strategy is to increase government efficiency.[134] IDAD also places a premium on including the civilian populace in the planning and enactment of development programs which "target" the specific social-political problems that are potential sources of unrest.[135]

B. THE PROPER ROLE FOR AIR POWER IN LIC

One of the most entrenched biases of strategic bombing enthusiasts is that aircraft are best employed as weapons.[136] This "shooter" mentality has developed from the strategic bombing model's emphasis on selecting and destroying targets. Such a frame of reference is a hindrance to operations in a LIC campaign. First of all, as highlighted earlier, the available targets in LIC cannot be struck effectively by aircraft. Secondly, if the main efforts to defeat the LIC actor are accomplished on the ground, then the primary role for air power should be to support these operations. In a LIC campaign modeled after the Leites and Wolf framework, air

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133. FM 100-20/AFP 3-20, p. 2-7.

134. Ibid., p. 2-8.

135. Ibid., pp. 2-8-2-9.

136. For an example of this type of bias see Warden, *The Air Campaign*.

power has five primary missions: reconnaissance and surveillance (RECCE); psychological operations (PSYOPS); maintenance of air lines of communication (ALOC); close air support (CAS); and support of civil action programs. None of these missions reflect the traditional role for air power envisioned for conventional warfare. However, they are all vital, effective contributions to a comprehensive low-intensity campaign.

1. Reconnaissance and Surveillance

The RECCE mission furnishes timely intelligence necessary for effective, accurate application of military firepower. As stated earlier, accurate intelligence is particularly important in the LIC environment because of the difficulty in distinguishing between innocent civilians and combatants. The anti-Communist campaign against the "Huks" in the Philippines (1946-1954) provides an example of the successful use of RECCE aircraft to support a LIC campaign. Specially designed battalion combat teams (BCTs) were used to target guerrilla forces. The BCTs were composed of light aircraft and small ground teams that would conduct combined, clandestine reconnaissance operations to ensure that a "targeted" village was indeed a guerrilla encampment.[137] Larger ground units would then attack the guerrilla camp with

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137. Lt Col Tomas C. Tirona, "The Philippine Anti-Communist Campaign," *Air University Quarterly Review*, Summer 1954, p. 50.

the support of "on-station" air cover provided by the reconnaissance aircraft.[138] The operations carried out by these special task forces were critical in convincing the Huk guerrillas that violent rebellion was futile and that negotiations with the government were in order.[139]

2. Air Lines of Communication

The ALOC mission entails clandestine insertion of ground teams and subsequent resupply for, and radio contact with, these teams. ALOC aircraft represent the only link with the "outside world" for these teams. ALOC can also allow large formations to operate without the hindrance of a huge logistical "tail." This allows greater freedom of action for ground forces, especially in difficult terrain. During the Greek Civil War, Royal Hellenic Air Force (RHAF) pilots flew most of their sorties in support of the Greek National Army (GNA).[140] ALOC sorties proved vital in resupplying the GNA with food, medical supplies and ammunition.[141] Given the rough, mountainous terrain and hazardous winter conditions, the army's anti-guerrilla campaigns would have been impossible

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138. Ibid.

139. Cable, *Conflict of Myths*, p. 61.

140. Lt Col M. A. Campbell, Lt Col E. W. Downs, and Lt Col L. V. Schuetta, *The Employment of Airpower in the Greek Civil War, 1947-1949* (Maxwell AFB, AL: Aerospace Studies Institute, 1964), p. 37.

141. Ibid., p. 41.

without aerial resupply.[142] ALOC was a decisive factor in the Greek Civil War. Aerial resupply allowed the GNA to pursue the Communists into their mountain strongholds, where the guerrillas were cut off from their own sources of material and manpower. The GNA then simply pressed the attack until the Communists could no longer resist.[143]

3. Close-Air Support

Much like the concept of close-air support that is part of the strategic bombing model, CAS missions provide fire support to ground troops when they encounter superior enemy forces. In conventional operations, CAS is often part of a combined offensive operation. In LIC, the majority of CAS missions would be flown in response to requests by ground forces in need of assistance. CAS aircraft might fly cover sorties, in which they would loiter in a specific area prepared to deliver firepower when needed, but they would not generally carry out offensive operations. The emphasis on minimizing the use of military firepower in LIC necessitates a more reactionary posture than CAS assets would maintain in a conventional conflict.

4. Psychological Operations

The first three LIC air missions discussed are all primarily concerned with what Leites and Wolf would call

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142. Ibid., pp. 43-47.

143. Ibid., p. 58.

"output reduction" operations, that is attacking and capturing the opponent's fielded forces. PSYOPS are concerned with attacking the "conversion mechanism." PSYOPS missions include leaflet drops, broadcasting from mounted loudspeaker systems, and transmitting radio programs which deliver information to the rebels or isolated members of the populace. In 1953, during the Malayan Emergency, the Royal Air Force (RAF) began using specially equipped aircraft to conduct psychological operations against the MPLA guerrillas. Several loud-speaker equipped aircraft formed a unit known as "Voice Flight."[144] The RAF "targeted" areas of known guerrilla concentrations with messages designed to lower morale and encourage desertion. The results of this campaign were dramatic: 70% of the guerrillas who surrendered during the period in which Voice Flight operated claimed to have been influenced by these broadcasts.[145]

5. Support of Civil Actions

Aircraft can play a vital role in civil action designed to increase government effectiveness and legitimacy. Aircraft can be employed to transport construction materials, equipment, and manpower for development projects. They can also transport medical supplies, technicians, and food in

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144. Maj Arthur D. Barondes, *The Accomplishments of Airpower in the Malayan Emergency (1948-1960)* (Maxwell AFB, AL: Aerospace Studies Institute, 1963), p. 58.

145. Ibid., p. 59.

support of humanitarian and social welfare projects. Recent examples of employing air power in this manner were carried out by the United States European Command across the African continent in early 1992. Army and Air National Guard units conducted joint exercises which provided medical assistance, repaired a hospital, and built clinics and schools in support of social welfare programs.[146] U.S. personnel also trained local security forces in weapons handling, parachute jumping, and performing humanitarian work. The training programs run in Senegal, Guinea, Mali, and Botswana were aimed at developing non-politicized, professional militaries subordinate to civilian authority and capable of contributing to social development programs.[147]

C. SUMMARY

The strategic bombing model is inappropriate for LIC operations. This chapter has delivered an alternative framework from which to plan LIC campaigns. Within this framework air power can contribute vital support to LIC operations. Air power has five primary missions in LIC: reconnaissance and surveillance, psychological operations, maintenance of air lines of communication, close air support, and support of civil action programs. These missions reflect the premise

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146. See William Matthews, "U.S. Military Shifts focus, Resources to Africa" *Air Force Times* , 8 June 1992, p. 24.

147. Ibid.

that within LIC the employment of air assets should focus more on the airplane's ability to support ground operations and less on its capability to carry and drop ordnance.

VI. CONCLUSION

In the scramble to react to the dramatic changes in the domestic and international scenes of the late 1980s, the U.S. Air Force has attempted to retain its traditional ways of doing business. The "reorganization" plan focused primarily on cutting costs by reducing personnel. The Air Force still insists on developing and acquiring weapons systems appropriate exclusively for the Cold War milieu. The danger of behaving in this manner lies in the fact that many, if not most, of the security challenges that the United States will face in coming years will be distinctly different than anything it has dealt with in the past. Therefore, the greatest mistake Air Force leadership can make is to rely on a doctrine designed specifically for conventional war.

Credible evidence exists that the Air Force will indeed make this mistake as it heads into the future security arena. Since the first application of strategic bombing principles in World War II, air power advocates have affirmed the effectiveness of this model. They have attributed every limitation and failure of the strategic bombing model to "external" factors not under the control of planners and operators. There are no indicators that the Air Force has loosened its grip upon strategic bombing during the turmoil of the late 1980s. In fact the Desert Storm air campaign in 1991

served to validate the strategic bombing model and further entrench its principles in the minds of American airmen.

American military involvement since Desert Storm indicates that the United States will be getting involved in more and more conflicts classified as low-intensity. If this is true then the Air Force needs to evaluate its ability to operate outside the tenets of strategic bombing. The nature of low-intensity conflict undermines the strategic bombing model. The "leadership element" in LIC scenarios is vastly different than conventional conflict. Attempts to pressure the enemy leadership into submission will only further aggravate the conflict. The traditional targets struck in strategic air campaigns do not exist in the same manner as conventional conflict. Production, infrastructure, and communication networks are primitive or clandestine. Even the distinction between enemy forces and innocent civilians is blurred. In this environment strategic bombing cannot work.

The best answer to how to employ air power in low-intensity conflict is to exploit the airplane's ability to support ground operations. This includes combat operations in the form of inserting small tactical ground teams, aerial resupply and communication, and psychological operations. It also means taking advantage of cargo aircraft to support civic action programs. Air assets can be used to deliver construction equipment and supplies as well as medical

personnel to areas never before reached by government institutions. This mission is key in low-intensity conflicts.

It is necessary to change the role for air power in order to effectively employ air assets in low-intensity operations. However, this change will prove a real burden to those who have to convince traditional air power advocates it is needed. The major barrier to employing air power in a manner appropriate to LIC is the doctrinal inertia from 40 years of preparation for war with the Soviet Union. During this time the aircraft has been viewed as a weapon. Its other capabilities were relegated to "auxiliary" missions. The fact that air power's proper role in low-intensity conflict downplays "shooter" missions is going to make for a "tough sell" to traditional die-hards. The challenges, then, are for those who recognize the wisdom of this approach to communicate it to those who are locked into old modes of thinking; and for those who are blind to the wisdom of this approach to open their eyes and minds to the reality of today's new and demanding security environment.

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